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## Comparative Study of Optimization of Plate Fin Heat Exchanger and Pressure Vessel Design using mTLBO Algorithm

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References

+ Article information

### Abstract

Teaching Learning Based Optimization (TLBO) algorithm has been proved beneficial in many engineering applications. This algorithm is free from any algorithm specific parameters and can be adapted to all types of design problems. However, there are some drawbacks like convergence to local optimal solution, large computational time and slow convergence rate for complex functions. Some modifications were introduced to overcome these drawbacks in modified Teaching Learning Based Optimization (mTLBO) algorithm. In this paper mTLBO has been applied to optimize plate fin heat exchanger and pressure vessel design. The performance of mTLBO algorithm was compared with original algorithm and other population based techniques such as Particle Swarm Optimization, Generic Algorithm and Artificial Bee Colony. It was found that mTLBO gives the least value of entropy generation units that is 7.22% less than the value obtained using TLBO. Also cost of pressure vessel design using mTLBO is 3.2% lower than that of TLBO design.

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Abstract

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